



Virginia Pollution Prevention Case Study

U.S. Department of Transportation - James River Reserve Fleet

Facility Information

The James River Reserve Fleet (JRRF) is part of the U.S. Department of Transportation's Maritime Administration (MARAD) located on the Joint Base Langley-Eustis, in Fort Eustis, Virginia. The JRRF is tasked with preservation and maintenance of vessels anchored with them in the James River. The JRRF is a leader in environmental excellence through their Environmental Management System (EMS) and Green Purchasing Program. The fleet has been a member of the Virginia Department of Environmental Quality's Virginia Environmental Excellence Program (VEEP) and recently moved up from the E3 level to the E4 level of the program because of their community involvement efforts and EMS verification by a third-party auditor.

Environmental Challenges and Opportunities

JRRF began to implement an EMS several years before Executive Order 13423 required it of all federal agencies. The JRRF became the lead for the Department of Transportation to test the concept and provide lessons learned to its counterparts in other areas of the country. By teaming up with other ports the JRRF was able to participate in training and workshops to refine the EMS. Even before beginning the formal EMS, the Fleet already had in place some the operational controls, or Standard Operating Procedures (SOP), to address certain issues. Once the Fleet began to more formally determine its significant environmental aspects and impacts, some of the existing SOPs were used as a starting point to begin implementation of the EMS.

The Fleet has implemented the EMS as a team concept, with all members of the fleet participating, in addition to operational teams from each department being an important piece of the EMS. In an effort to continually improve their EMS, the Fleet sought out third-party audits of their program. These audits were conducted in 2010 and 2013. JRRF has also taken on a EMS leadership role with the other two MARAD Fleets, since they are the only one to currently have a fully implemented EMS.

Implementation of the Program

JRRF implemented a program to keep the vessels at anchorage cleaner, oil and grease free, and on schedule for sweeping of solids that collect on the decks and disposing of them properly. Onboard all vessels the Fleet has replaced the ship's original overboard drains with smaller perforated openings and attached bio-flex filters to catch all solid materials that would otherwise be washed overboard. Water filtering and deflecting wattles have also been placed by some drains to direct the flow of stormwater to certain drains, thereby reducing the number of discharge areas. All environmental SOPs for vessels are practiced on a set schedule, either daily, weekly, or monthly. Some of the plans cover deck drain cleaning and maintenance, deck machinery operations, and vessel paint remediation.

JRRF has thirteen SOPs that support the EMS and cover potential environmental impacts from the vessels at anchorage as well as activities on shore. Shore side storm drains have been modified with custom made bio-flex inserts filtering solids, oil, and greases from stormwater and

preventing it from discharging into the outfalls which lead directly to the river. JRRF also installed and maintains a rain garden in their open storage area to support the filtering of stormwater. All shore side machinery is required to have drip pans underneath the equipment when it is not in use, including forklifts, mobile cranes, and tractors.

The Fleet has made great strides with their Green Purchasing Program. All of the purchases made by JRRF are reviewed prior to finalization to ensure inclusion of environmentally preferable products when possible. Because of this procurement system, over 90% of JRRF's liquid products, such as fuels, lubricants, and cleaners, are bio-based, bio-mixed, or biodegradable. In 2014 JRRF was awarded a Green Purchasing Excellence Award from the Department of Transportation (DOT) Sustainability Awards for their Biobased Oil Utilization Program. JRRF also uses a "cradle to grave" tracking system to purchase environmentally friendly products that can then be recycled at the end of their usable life.

In April 2014, JRRF was also awarded the Innovative Waste Management Award from the DOT Sustainability Awards for their cleanup of all unused and outdated material that was on their property. The success of this project was in large part due to the effective teamwork of the Fleet staff. The "Fleet Compound Clean-Up Project" resulted in the recycling and reuse of 89 tons of excess material, primarily metals from retired ships. The project focused on identifying reusable items and selling them through GSA auction, resulting in \$17,000 returned to the government while avoiding an estimated \$50,000 it would have cost to contract for waste removal. This project required close coordination between numerous external stakeholders. The Fleet's recycling and waste management is an ongoing and very successful effort.

In addition to its large scale recycling efforts, JRRF also participates in recycling programs for common office recyclables such as paper, cardboard, plastic, and cans. The Fleet participates in the Joint Base Langley Eustis (JBLE) Cans for Cash recycling contest for all of the base tenants. JRRF was awarded first place in 2015 with 165 lbs. of cans collected during the month-long contest.

JRRF is an active part of the Base's environmental programs. JRRF participates in JBLE's Earth Day events every year, providing a public display with information on JRRF's environmental programs and the history of the fleet. JRRF also provides shoreline cleanup of discarded materials such as plastic bags, bottles, cans, tires, etc. Cleanups are conducted each year by JRRF volunteers that go out on a JRRF boat to remove trash from neighboring shorelines. The Fleet coordinates and partners with the JBLE on sustainability training, inspections, recycling, and safe disposal of hazardous materials as well.

Evaluation of the Process

The JRRF had numerous lessons learned while implementing the EMS. One key take-away was to start with something everyone already knows is possible and work from there – the JRRF started with the Fuel Transfer Plan that was already in use at the Fleet. This early success gave them more confidence moving forward to expand their efforts. The terminology of the ISO 14001 based EMS can be overwhelming at first, starting with a familiar task helps the workforce put it into a context that is easily understood. Another lesson learned about implementing an EMS was that the workforce must see it as a part of their job, rather than something additional

they must complete in order to do their job. It should become natural to consider the SOP as much a part of a job as the wrench or the hammer. Commitment to the EMS is essential to its success.

The EMS is working well and has resulted in improvements to the environmental readiness of the Fleet. Through internal and external audits, JRRF plans to continually improve on the EMS and find ways to strengthen the programs already in place. JRRF conducts quarterly self-inspections for environmental compliance, which include weekly and monthly inspections by the workforce. These regular self-inspections allow JRRF to find potential issues when they are minor and correct them on the spot or within a few days of the inspection.

In 2013 JRRF contracted out the services of ABS Consulting for a third-party EMS audit in order to take their EMS to the next level of verification. There were no non-conformances issued during the external audit and JRRF was issued a letter confirming their conformance with the ISO 14001 Standards for environmental management. JBLE also conducts annual compliance audits of the Fleet and other tenants of the Base to ensure that all facilities on base are in conformance with the JBLE EMS.

JRRF ensures that appropriate environmental training is provided to all of their employees because they are the most important part of a functioning EMS. There are numerous training requirements for employees, such as vessel general, fuel transfer, Stormwater Pollution Prevention Plan, green procurement, hazardous waste storage and disposal, energy conservation, general environmental awareness, and advanced environmental awareness. The level of training depends on the individual's roles and responsibilities. An employee not directly involved in a process only receives the basic information, while key players receive more in depth and frequent training. Roles and responsibilities are specified in every operational control. In addition to the extensive training program, the facility has building energy monitors for each building and twenty trained environmental auditors, highlighting their commitment to support environmental compliance and sustainability.

Continual Improvement of the Program

The Fleet wants to continue to lead by example and provides EMS support to other MARAD and DOT facilities in Texas, California and New York. JRRF has also worked to mentor other facilities in Virginia that are interested in starting an EMS or that already have one in place. JRRF volunteered to perform a Third Party Audit for the City of Newport News Engineering Department's EMS as part of the Virginia Environmental Excellence Program. They have also made themselves available to support and mentor additional VEEP partners as well as reaching out to facilities that have a strong environmental record and might be interested in joining the program. This is an ongoing effort and something that JRRF hopes to find more opportunities for in the future.